Appl. No. 10/632,484
Amdt. dated November 13, 2009
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 2454

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

       1.   (Currently Amended) A method comprising:

       assigning an Internet Protocol (IP) multicast group address to a virtual private LAN service;

       encapsulating a data packet of the virtual private LAN service in an IP packet designating the IP multicast group address and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address; and

       transmitting the IP packet using an IP multicast routing protocol,

       wherein the IP multicast group address assigned to the virtual private LAN service is within a range set aside for use with virtual private LAN services, and

       wherein the range set aside is within a range having an administrative scope.

       2-6.   (Canceled)

       7.   (Previously Presented) The method as in claim 1, further comprising distributing the Internet Protocol multicast group address.

       8.   (Canceled).

       9.   (Previously Presented) The method as in claim 1, wherein the IP multicast routing protocol comprises a source-based routing protocol.

       10.   (Previously Presented) The method as in claim 1, wherein the IP multicast routing protocol comprises a core-based routing protocol.

11.   (Previously Presented) The method as in claim 1, wherein the IP multicast routing protocol uses a distribution tree for distributing the IP packet for the virtual private LAN service.

12.   (Previously Presented) The method as in claim 1, wherein the virtual private LAN service includes an Internet Protocol/Multi-protocol label switching service.

13.   (Previously Presented) The method as in claim 1, wherein the virtual private LAN service is part of a Layer 2 virtual private network.

14-16. (Canceled)

17.   (Currently Amended) A device[[,]] comprising:

a first network interface associated with a virtual private LAN service adapted to transmit an Internet Protocol (IP) packet encapsulating a data packet, the IP packet designating an IP multicast group address assigned to a virtual private LAN service and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address; and

a second network interface associated with the virtual private LAN service adapted for receiving an IP packet which (a) encapsulates a data packet, (b) designates the IP multicast group address assigned to the virtual private LAN service and (c) includes an Ethernet header designating the multicast Ethernet address associated with the IP multicast group address, wherein the IP multicast group address assigned to the virtual private LAN service is within a range set aside for use with virtual private LAN services, and wherein the range set aside is within a range having an administrative scope.

18-24. (Canceled)

25.   (Previously Presented) The device of claim 17, wherein the IP multicast routing protocol comprises a source-based routing protocol.

26.   (Previously Presented) The device of claim 17, wherein the IP multicast routing protocol comprises a core-based routing protocol.

27.   (Previously Presented) The device of claim 17, wherein the IP multicast routing protocol uses a distribution tree for the virtual private LAN service.

28.   (Previously Presented) The device of claim 17, wherein the virtual private LAN service is part of an Internet Protocol/Multi-protocol label switching service.

29.   (Previously Presented) The device of claim 17, wherein the virtual private LAN service is part of a Layer 2 virtual private network.

30-32. (Canceled)

33.   (Currently Amended) A device comprising:
a first port;
a second port; and
a routing engine that (a) (i) encapsulates a data packet of a virtual private LAN service received at the first port in an IP packet designating an IP multicast group address associated with the virtual private LAN service and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address and (ii) provides the IP packet to the second port for transmitting; and (b) recovers a data packet of the virtual private LAN service that was encapsulated in an IP packet received at the second port and designating an IP multicast group address associated with the virtual private LAN service and provides the recovered data packet to the first port for transmitting, _

wherein the IP multicast group address associated with the virtual private LAN service is within a range set aside for use with virtual private LAN services, and

wherein the range set aside is within a range having an administrative scope.

34-35. (Canceled)

36.   (Previously Presented) The device of Claim 33, wherein the routing engine associates the virtual private LAN service with the IP multicast group address.

37.   (Previously Presented) The device of Claim 33, wherein the IP packet is routed using a source-based IP multicast routing protocol.

38.   (Previously Presented) The device of Claim 33, wherein the IP packet is routed using a core-based IP multicast routing protocol.

39.   (Previously Presented) The device of Claim 33, wherein the IP packet is routed using an IP multicast routing protocol and a distribution tree for distributing the IP packets for the virtual private LAN service.

40.   (Previously Presented) The device of Claim 33, wherein the IP packet is distributed using an Internet Protocol/Multi-protocol label switching service.

41.   (Previously Presented) The device of Claim 33, wherein the virtual private LAN service is related to a Layer 2 virtual private network.

42.   (Withdrawn) The edge device of Claim 33, wherein the routing engine is adapted to enforce an access control list at the first port to deny routing packets not associated with an approved virtual private LAN service.

43.   (Currently Amended) A device comprising:
         a first port for connecting to a first network;
         a second port for connecting to a second network; and
         means for routing that (a)(i) encapsulates a data packet of a virtual private LAN service received at the first port in an IP packet designating an IP multicast group address associated with the virtual private LAN service and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address and (ii) provides the IP packet to the second port for transmitting; and (b) recovers a data packet of the virtual private

LAN service encapsulated in an IP packet received at the second port and designating an IP multicast group address associated with the virtual private LAN service and provides the recovered data packet to the first port for transmitting,

wherein the IP multicast group address associated with the virtual private LAN service is within a range set aside for use with virtual private LAN services, and

wherein the range set aside is within a range having an administrative scope.

44-45.   (Canceled)

46.   (Previously Presented) The device of Claim 43, wherein the means for routing associates the virtual private LAN service with the IP multicast group address.

47.   (Previously Presented) The device of Claim 43, wherein the IP packet is routed using a source-based IP multicast routing protocol.

48.   (Previously Presented) The device of Claim 43, wherein the IP packet is routed using a core-based IP multicast routing protocol.

49.   (Previously Presented) The device of Claim 43, wherein the IP packet is routed using an IP multicast routing protocol and a distribution tree for distributing the IP packets for the virtual private LAN service.

50.   (Previously Presented) The device of Claim 43, wherein the IP packets are distributed in the second network using an Internet Protocol/Multi-protocol label switching service.

51.   (Previously Presented) The device of Claim 43, wherein the virtual private LAN service relates to a Layer 2 virtual private network.

52.   (Withdrawn) The edge device of Claim 43, wherein the means for routing enforces an access control list at the first port to deny routing packets not associated with an approved virtual private LAN service.

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53.　　(Currently Amended) A method comprising:

encapsulating a data packet of a virtual private LAN service in an internet protocol (IP) packet designating an IP multicast group address that has been associated with the virtual private LAN service and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address; and

transmitting the IP packets,

wherein the IP multicast group address associated with the virtual private LAN service is within a range set aside for use with virtual private LAN services, and

wherein the range set aside is within a range having an administrative scope.

54.　　(Previously Presented) A method as in Claim 53, further comprising:

receiving an IP packet encapsulating a data packet and designating the IP multicast group address;

recovering a data packet from the IP packet; and

transmitting the recovered data packet.

55-56. (Canceled)

57.　　(Previously Presented) The method of Claim 53, further comprising associating the virtual private LAN service with the Internet Protocol multicast group address.

58.　　(Previously Presented) The method of Claim 53, wherein the IP packet is routed using a source-based IP multicast routing protocol, which comprises a source-based routing protocol.

59.　　(Previously Presented) The method of Claim 53, wherein the IP packet is routed using a core-based IP multicast routing protocol.

60.　　(Previously Presented) The method of Claim 53, wherein the IP packet is routed using an IP multicast routing protocol and a distribution tree for distributing IP packets for the virtual private LAN service.

61.   (Previously Presented) The method of Claim 53, wherein the IP encapsulated customer packets use an Internet Protocol/Multi-protocol label switching service.

62.   (Previously Presented) The method of Claim 53, wherein the virtual private LAN service relates to a Layer 2 virtual private network.

63.   (Withdrawn) The method of Claim 53, further comprising enforcing an access control list to deny routing packets not associated with an approved virtual private LAN service.

64.   (Previously Presented) The method as in claim 7, wherein the Internet Protocol multicast group address is distributed using a name server.

65.   (Previously Presented) The device of Claim 33, wherein the IP multicast group address is obtained from a name server.

66.   (Previously Presented) The device of Claim 43, wherein IP multicast group address is obtained from a name server.

67.   (Previously Presented) The method of Claim 53, wherein the Internet Protocol multicast group address is obtained from a name server.